

Having now described the invention, we now claim:

1. A network document system including a document processing device, a document processing device controller and a network interface controller for communicating job data and control data to and from a network, wherein the interface controller is disposed, intermediate the document processing device controller and the network, and in parallel communication with the document processing device and document processing device controller, for segregating the job data and the control data and wherein the control data is directly communicated between the network interface controller and the document processing device.

2. The system as claimed in claim 1 wherein the control data includes any of: diagnostic data, operating software, remote operating instructions, performance reports, specification of system states and the associated actions, or requests for information from system elements.

3. The system as claimed in claim 2 wherein the performance reports comprise a number of documents generated by the document processing device, accounting information for assigning a billing responsibility for the documents generated, toner, ink, or paper consumption data, service history, device configuration, usage data, current status, machine identification or part or system failure data.

4. The system as claimed in claim 1 wherein the interface controller identifies object-oriented rendering data within the job data, and parallelly communicates the object-oriented rendering data to the document processing device controller and the document processing device.

5. The system as claimed in claim 1 wherein the interface controller identifies object-oriented rendering data within the job data, and individually communicates the object-oriented rendering data to the document processing device controller and the document processing device.

6. The system as claimed in claim 1 wherein the interface controller comprises either a physical or logical entity in the system.

5 7. A business to business communication system for controlling and monitoring a document processing device through network communications, comprising:

a document processing device responsive to remote communication signals and capable of issuing device operating status signals, the communication signals and status signals being received and sent, respectively, via a network system.

10 a network interface controller interposed between the document processing device and the network system for distinguishing the remote communication signals as job data or control data;

a document processing device controller, disposed intermediate the network interface controller and the document processing device, for translating the job data communicated from the network interface controller into document processing device data executable by the document processing device; and,

15 wherein the control data is communicated to the document processing device directly from the network interface controller.

20 8. The system as defined in claim 7 wherein the control data includes the device operating status signals communicated as a regular operational report or in response to an inquiry received by the network interface controller from the network system.

25 9. The system as defined in claim 7 wherein the control data includes commands, flags or instructions for the device or interface controller to interpret or execute for determining under what conditions the system should return information to a remote entity.

30 10. The system as defined in claim 7 wherein the control data includes instructions, flags or commands telling the system what information is to be returned to a remote entity.

11. The system as defined in claim 7 wherein the control data includes instructions, flags or commands telling the system what types of local information processing should be performed on machine information before being returned to a remote entity.

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12. The system as defined in claim 7 wherein the remote communication signals comprise a request and a response for control data from the document processing device and specification of document processing device conditions and associated actions.

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13. The system as defined in claim 8 wherein the device operating status signals comprise billing information.

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14. The system as defined in claim 8 wherein the device operating status signals comprise accounting information.

15. The system as defined in claim 8 wherein the device operating status signals comprise service information.

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16. The system as defined in claim 7 wherein the control data comprises object-oriented rendering data.

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17. The system as defined in claim 16 wherein the object-oriented rendering data distinguishes text, pictures and business graphics for enhancing document processing device operation.

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18. The system as defined in claim 17 wherein the object-oriented rendering data comprises page description language data about a document to be made at the document processing device.

19. A network document processing system wherein job data for processing a document is communicated from a job source to a printer through a network, comprising:

a digital front end (DFE) disposed in communication with the printer for receiving and translating the job data into imaging signals recognizable by the printer; and,

an intelligent interface network controller (iNIC) disposed intermediate the network and the DFE, and in parallel communication with the printer and the DFE, for selectively communicating the job data and control data directly to or from the printer, whereby said selectively communicated job data and control data may bypass flow path communication through the DFE during printer communication with the network.

20. The document processing system as claimed in claim 19 wherein the job data and the control data enable printer value-added services and management functions.

21. The document processing system as defined in claim 14 wherein the printer value-added services and management functions include any from a group of: remote diagnostics, remote device management, image processing, process control, software update, consumable supplies status and ordering, and variable data job integrity.

22. A method of operating a network-based assembly for document processing wherein the assembly includes an interface controller, a document processing device and a digital front end (DFE) for the document processing device, the method comprising steps of:

communicating job data and control data to the assembly through a network system;

determining the appropriate flow of the job data and the control data to the assembly through the interface controller;

segregating, at the interface controller, the control data from the job data;

communicating the control data directly to the document processing device and the job data at least to the DFE;

converting the job data at the DFE to document processing signals recognizable by the document processing device;

directing the document processing signals to the document processing device; and,

executing the document processing signals at the document processing device, whereby the control data is communicated to and from the document
5 processing device exclusive of a flow path through the DFE.

23. The method as claimed in claim 22 wherein the executing comprises processing the document in a xerographic environment.